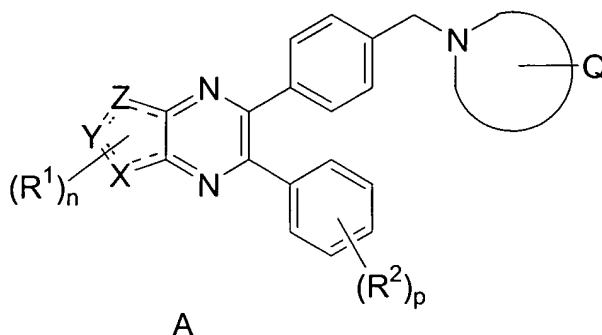


In the claims:

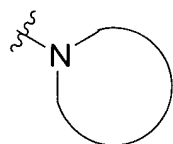
1. (original) A compound of the formula A:



wherein:

n is 0, 1, 2 or 3;
p is 0, 1, 2 or 3;
r is 0 or 1;
s is 0 or 1;
m is 0 or 1;
a is 0 or 1;
b is 0 or 1;

X, Y and Z are independently selected from: C, N, S or O provided that at least one of X, Y or Z is N, S or O;



is: heterocycle, optionally substituted with one to three R^Z;

Q is selected from: H, -NR⁵R⁶ and heterocycle, said heterocycle which is optionally substituted with one to three R^Z;

R¹ and R² are independently selected from:

- 1) (C=O)_aO_bC₁-C₁₀ alkyl,
- 2) (C=O)_aO_baryl,

- 3) C₂-C₁₀ alkenyl,
- 4) C₂-C₁₀ alkynyl,
- 5) (C=O)_aO_b heterocyclyl,
- 6) (C=O)_aO_bC₃-C₈ cycloalkyl,
- 7) CO₂H,
- 8) halo,
- 9) CN,
- 10) OH,
- 11) O_bC₁-C₆ perfluoroalkyl,
- 12) O_a(C=O)_bNR³R⁴,
- 13) NR^c(C=O)NR³R⁴,
- 14) S(O)_mR^a,
- 15) S(O)₂NR³R⁴,
- 16) NR^cS(O)_mR^a,
- 17) oxo,
- 18) CHO,
- 19) NO₂,
- 20) NR^c(C=O)O_bR^a,
- 21) O(C=O)O_bC₁-C₁₀ alkyl,
- 22) O(C=O)O_bC₃-C₈ cycloalkyl,
- 23) O(C=O)O_baryl, and
- 24) O(C=O)O_b-heterocycle,

said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R^Z;

R³ and R⁴ are independently selected from:

- 1) H,
- 2) (C=O)_aO_bC₁-C₁₀ alkyl,
- 3) (C=O)_aO_baryl,
- 4) C₂-C₁₀ alkenyl,
- 5) C₂-C₁₀ alkynyl,
- 6) (C=O)_aO_b heterocyclyl,

- 7) $(\text{C}=\text{O})_a\text{O}_b\text{C}_3\text{-C}_8$ cycloalkyl,
- 8) OH,
- 9) $\text{C}_1\text{-C}_6$ perfluoroalkyl,
- 10) $\text{S}(\text{O})_m\text{R}^a$, and
- 11) CHO,

said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z , or

R^3 and R^4 can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^z ;

R^5 and R^6 are independently selected from:

- 1) H,
- 2) $(\text{C}=\text{O})_a\text{O}_b\text{C}_1\text{-C}_{10}$ alkyl,
- 3) $(\text{C}=\text{O})_a\text{O}_b$ aryl,
- 4) $\text{C}_2\text{-C}_{10}$ alkenyl,
- 5) $\text{C}_2\text{-C}_{10}$ alkynyl,
- 6) $(\text{C}=\text{O})_a\text{O}_b$ heterocyclyl,
- 7) $(\text{C}=\text{O})_a\text{O}_b\text{C}_3\text{-C}_8$ cycloalkyl,
- 8) OH,
- 9) $\text{C}_1\text{-C}_6$ perfluoroalkyl,
- 10) $(\text{C}=\text{O})\text{NR}^3\text{R}^4$,
- 11) $\text{S}(\text{O})_m\text{R}^a$,
- 12) $\text{S}(\text{O})_2\text{NR}^3\text{R}^4$, and
- 13) CHO,

said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z , or

R^5 and R^6 can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in

addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^Z;

R^Z is selected from:

- 1) (C=O)_rO_s(C₁-C₁₀)alkyl,
- 2) O_r(C₁-C₃)perfluoroalkyl,
- 3) (C₀-C₆)alkylene-S(O)_mR^a,
- 4) oxo,
- 5) OH,
- 6) halo,
- 7) CN,
- 8) (C=O)_rO_s(C₂-C₁₀)alkenyl,
- 9) (C=O)_rO_s(C₂-C₁₀)alkynyl,
- 10) (C=O)_rO_s(C₃-C₆)cycloalkyl,
- 11) (C=O)_rO_s(C₀-C₆)alkylene-aryl,
- 12) (C=O)_rO_s(C₀-C₆)alkylene-heterocyclyl,
- 13) (C=O)_rO_s(C₀-C₆)alkylene-N(R^b)₂,
- 14) C(O)R^a,
- 15) (C₀-C₆)alkylene-CO₂R^a,
- 16) C(O)H,
- 17) (C₀-C₆)alkylene-CO₂H,
- 18) C(O)N(R^b)₂,
- 19) S(O)_mR^a,
- 20) NR^c(C=O)O_bR^a,
- 21) O(C=O)O_bC₁-C₁₀ alkyl,
- 22) O(C=O)O_bC₃-C₈ cycloalkyl,
- 23) O(C=O)O_baryl, and
- 24) O(C=O)O_b-heterocycle,

said alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heterocyclyl is optionally substituted with up to three substituents selected from R^b, OH, (C₁-C₆)alkoxy, halogen, CO₂H, CN, O(C=O)C₁-C₆ alkyl, oxo, and N(R^b)₂;

R^a is substituted or unsubstituted (C₁-C₆)alkyl, substituted or unsubstituted (C₂-C₆)alkenyl, substituted or unsubstituted (C₂-C₆)alkynyl, substituted or unsubstituted (C₃-C₆)cycloalkyl, substituted or unsubstituted aryl, (C₁-C₆)perfluoroalkyl, 2,2,2-trifluoroethyl, or substituted or unsubstituted heterocyclyl; and

R^b is H, (C₁-C₆)alkyl, substituted or unsubstituted aryl, substituted or unsubstituted benzyl, substituted or unsubstituted heterocyclyl, (C₃-C₆)cycloalkyl, (C=O)OC₁-C₆ alkyl, (C=O)C₁-C₆ alkyl or S(O)₂R^a;

R^c is selected from:

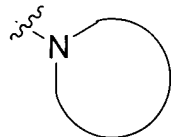
- 1) H,
- 2) C₁-C₁₀ alkyl,
- 3) aryl,
- 4) C₂-C₁₀ alkenyl,
- 5) C₂-C₁₀ alkynyl,
- 6) heterocyclyl,
- 7) C₃-C₈ cycloalkyl,
- 8) C₁-C₆ perfluoroalkyl,

said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

2. (original) The compound according to Claim 1 wherein:

n is 0 or 1;



is: heterocycle selected from 2-azepinone, benzimidazolyl, benzimidazolonyl, 2-diazapinone, imidazolyl, 2-imidazolidinone, indolyl, isoquinolinyl, morpholinyl, piperidyl,

piperazinyl, pyridyl, pyrrolidinyl, 2-piperidinone, 2-pyrimidinone, 2-pyrrolidinone, quinolinyl, tetrahydrofuryl, tetrahydroisoquinolinyl, and thienyl, said heterocycle optionally substituted with one to three R^Z;

Q is selected from: H and -NR⁵R⁶;

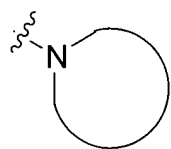
R¹ and R² are independently selected from:

- 1) (C=O)_aO_bC₁-C₁₀ alkyl,
- 2) (C=O)_aO_baryl,
- 3) C₂-C₁₀ alkenyl,
- 4) C₂-C₁₀ alkynyl,
- 5) (C=O)_aO_b heterocyclyl,
- 6) (C=O)_aO_bC₃-C₈ cycloalkyl,
- 7) CO₂H,
- 8) halo,
- 9) CN,
- 10) OH,
- 1) O_bC₁-C₆ perfluoroalkyl,
- 2) S(O)_mR^a,
- 3) NR^cS(O)_mR^a,
- 4) oxo,
- 5) CHO,
- 6) NO₂,
- 7) NR^c(C=O)O_bR^a,
- 8) O(C=O)O_bC₁-C₁₀ alkyl,
- 9) O(C=O)O_bC₃-C₈ cycloalkyl,
- 10) O(C=O)O_baryl,
- 11) O(C=O)O_b-heterocycle, and
- 12) NH₂,

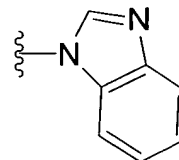
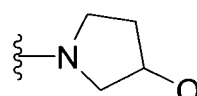
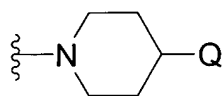
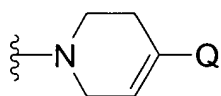
said alkyl, aryl, alkenyl, alkynyl, heterocyclyl, and cycloalkyl optionally substituted with one or more substituents selected from R^Z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

3. (original) The compound according to Claim 2 wherein:



is: heterocycle selected from



said heterocycle optionally substituted with one to three R^Z;

Q is selected from: -NR⁵R⁶;

R⁵ and R⁶ are independently selected from:

- 1) H,
- 2) (C=O)_aO_bC₁-C₁₀ alkyl,
- 3) (C=O)_aO_baryl,
- 4) C₂-C₁₀ alkenyl,
- 5) C₂-C₁₀ alkynyl,
- 6) (C=O)_aO_b heterocyclyl,
- 7) (C=O)_aO_bC₃-C₈ cycloalkyl,
- 8) OH,
- 9) C₁-C₆ perfluoroalkyl,
- 10) S(O)_mR^a, and
- 11) CHO,

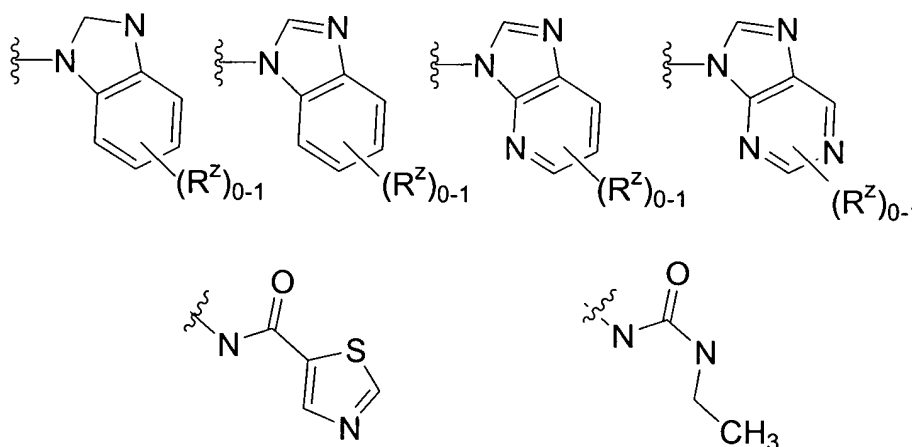
said alkyl, cycloalkyl, aryl, heterocyclyl, alkenyl, and alkynyl is optionally substituted with one or more substituents selected from R^Z, or

R⁵ and R⁶ can be taken together with the nitrogen to which they are attached to form a monocyclic or bicyclic heterocycle with 4-7 members in each ring and optionally containing, in addition to the nitrogen, 1-3 heteroatoms selected from N, O and S, said monocyclic or bicyclic heterocycle optionally substituted with one or more substituents selected from R^Z;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

4. (original) The compound according to Claim 3 wherein:

Q is selected from:



wherein R^Z can attach anywhere on the bicyclic structure;

R¹ and R² are independently selected from:

- 1) (C₁-C₆)alkyl,
- 2) (C₁-C₁₀)alkyl-OH
- 3) CO₂H,
- 4) halo,
- 5) CN,
- 6) OH,

- 7) oxo,
- 8) CHO,
- 9) NO₂, and
- 10) NH₂

RZ is independently selected from:

- 1) (C₁-C₆)alkyl,
- 2) (C₁-C₁₀)alkyl-OH
- 3) CO₂H,
- 4) halo,
- 5) CN,
- 6) OH,
- 7) oxo,
- 8) CHO,
- 9) NO₂, and
- 10) NH₂

or a pharmaceutically acceptable salt or a stereoisomer thereof.

5. (original) A compound which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-ethyl-*N'*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

N-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

6. (original) The TFA salt of a compound according to Claim 1 which is:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-ethyl-*N'*-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}urea;

N-{(3*R*)-1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purin-6-amine;

2-(4-{[4-(3*H*-imidazo[4,5-*b*]pyridin-3-yl)piperidin-1-yl]methyl}phenyl)-3-phenylthieno[3,4-*b*]pyrazine;

9-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-9*H*-purine;

{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1*H*-benzimidazol-2-yl}methanol;

2-{4-[(2-methyl-1*H*-benzimidazol-1-yl)methyl]phenyl}-3-phenylthieno[3,4-*b*]pyrazine;

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]-1,2,3,6-tetrahydropyridin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

N-{(3*R*)-1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]pyrrolidin-3-yl}-1,3-thiazole-5-carboxamide; and

1-{1-[4-(3-hydroxy-5-phenyl-2*H*-pyrazolo[3,4-*b*]pyrazin-6-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a stereoisomer thereof.

7. (original) A compound according to Claim 5 which is selected from:

1-{1-[4-(3-phenylthieno[3,4-*b*]pyrazin-2-yl)benzyl]piperidin-4-yl}-1,3-dihydro-2*H*-benzimidazol-2-one;

or a pharmaceutically acceptable salt or a stereoisomer thereof.

8. (original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 1.

9. (original) A pharmaceutical composition comprising a pharmaceutical carrier, and dispersed therein, a therapeutically effective amount of a compound of Claim 6.

10. (original) A method of inhibiting one or more of the isoforms of Akt in a mammal which comprises administering to the mammal a therapeutically effective amount of a compound of Claim 1.

11. (original) A method of inhibiting one or more of the isoforms of Akt in a mammal which comprises administering to the mammal a therapeutically effective amount of a compound of Claim 6.

12. (original) A method for treating cancer which comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 1.

13. (original) A method for treating cancer which comprises administering to a mammal in need thereof a therapeutically effective amount of a compound of Claim 6.

14. (original) A pharmaceutical composition made by combining the compound of Claim 1 and a pharmaceutically acceptable carrier.

15. (original) A process for making a pharmaceutical composition comprising combining a compound of Claim 1 and a pharmaceutically acceptable carrier.

16. The composition of Claim 8 further comprising a second compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,

- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and
- 15) an immunologic-enhancing drug.

17-18. (canceled)

19. A method of treating cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with radiation therapy.

20. A method of treating or preventing cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with a compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,
- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and

15) an immunologic-enhancing drug.

21. A method of treating cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 in combination with radiation therapy and a compound selected from:

- 1) an estrogen receptor modulator,
- 2) an androgen receptor modulator,
- 3) retinoid receptor modulator,
- 4) a cytotoxic agent,
- 5) an antiproliferative agent,
- 6) a prenyl-protein transferase inhibitor,
- 7) an HMG-CoA reductase inhibitor,
- 8) an HIV protease inhibitor,
- 9) a reverse transcriptase inhibitor,
- 10) an angiogenesis inhibitor,
- 11) an inhibitor of inherent multidrug resistance,
- 12) an anti-emetic agent,
- 13) an agent useful in the treatment of anemia,
- 14) agent useful in the treatment of neutropenia, and
- 15) an immunologic-enhancing drug.

22. A method of treating or preventing cancer which comprises administering a therapeutically effective amount of a compound of Claim 1 and paclitaxel or trastuzumab.